

IFW

00862.109205

PATENT APPLICATION

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

MASAKAZU MATSUGU

Application No.: 10/592,954

Int'l Filing Date: March 16, 2005

For: PARALLEL PULSE SIGNAL  
PROCESSING APPARATUS,  
PATTERN RECOGNITION  
APPARATUS, AND IMAGE  
INPUT APPARATUS

Examiner: Not Yet Assigned

Group Art Unit: 2121

March 23, 2007

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed below and on the attached Form PTO-1449. A copy of each non-U.S. patent document so listed is attached.

- (1) U.S. Patent No. 4,974,169
- (2) U.S. Patent No. 5,179,596
- (3) U.S. Patent No. 5,263,122
- (4) U.S. Patent No. 5,664,065
- (5) U.S. Patent No. 5,704,016
- (6) U.S. Patent No. 6,088,490
- (7) EP 1 262 912 A2

- (8) JP 55-124879
- (9) JP 2679730
- (10) JP 6-83994
- (11) JP 2624143
- (12) JP 7-262157
- (13) JP 7-334478
- (14) JP 8-153148
- (15) JP 2879670
- (16) JP 2-64788
- (17) WO 00/29970
- (18) Fukushima, et al., "Neocognitron: A New Algorithm for Pattern Recognition Tolerant of Deformation and Shifts in Position", Pattern Recognition, Vol. 15, 1982, pp. 455-469.
- (19) Murray, et al., "Pulse-Stream VLSI Neural Networks Mixing Analog and Digital Techniques", IEEE Trans. on Neural Networks, Vol. 2, 1991, pp. 193-204.
- (20) Eckhorn, et al., "Feature Linking via Synchronization among Distributed Assemblies: Simulation of Results from Cat Visual Cortex", Neural Computation, Vol. 2, 1990, pp. 293-307.
- (21) Broussard, et al., "Physiologically Motivated Image Fusion for Object Detection using a Pulse Coupled Neural Network", IEEE Trans. on Neural Networks, Vol. 10, 1999, pp. 554-563.
- (22) LeCun, et al., "Convolutional Networks for Images, Speech, and Time Series", in Handbook of Brain Theory and Neural Networks (M. Arbib. Ed.), MIT press, 1995, pp. 255-258.
- (23) Daigman, "Complete Discrete 2-D Gabor Transforms by Neural Networks for Image Analysis and Compression", IEEE Trans. on Acoustics, Speech, and Signal Processing, Vol. 36, 1988, pp. 1169-1179.

(24) Indiveri, "A Neuromorphic VLSI Device for Implementing 2-D Selective Attention Systems", IEEE Trans. on Neural Networks, Vol. 12, 2001, pp. 1455-1463.

Document (9) was cited in the specification at page 1. Documents (10) and (16) are believed to belong to the same patent family, respectively, as JP 6-93249 and JP 5-47870, which were also cited in the specification at page 1. Documents (11) to (15) and (18) to (20) were cited in the specification at page 2. Document (8) is believed to belong to the same patent family as JP 60-000712, which is also cited in the specification at page 2. Documents (4) and (21) were cited in the specification at page 3. Document (22) was cited in the specification at page 20. Document (23) was cited in the specification at page 22, and document (24) was cited in the specification at page 25.

Documents (1) to (3), (5), (7) and (17) were cited in the International Search Report and/or Written Opinion which issued in the corresponding international application. A copy of the International Search Report and a copy of the Written Opinion are enclosed.


Document (6) is believed to correspond to document (15).

In addition, abstracts have been located and are included for each of the non-English language documents.

Inasmuch as this application has not yet received a first Office Action on the merits, it is believed that this Information Disclosure Statement is timely. See 37 C.F.R. § 1.97(b)(3). Accordingly, the Examiner is urged to study this information in its entirety and to form an independent determination of the materiality of the information to the claimed invention. Additionally, the Examiner is requested to indicate that this information has been considered by initialing the appropriate portion of Form PTO-1449.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office by telephone at (714) 540-8700. All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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FORM PTO 1449 (modified)				ATTY DOCKET NO. <b>00862.109205</b>		APPLICATION NO. <b>10/592,954</b>	
U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE				APPLICANT <b>MASAKAZU MATSUGU</b>			
LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)				INT'L FILING DATE <b>March 16, 2005</b>		GROUP <b>2121</b>	
U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	<b>4,974,169</b>	<b>11/27/1990</b>	<b>Engel</b>	<b>364</b>	<b>513</b>		
	<b>5,179,596</b>	<b>01/12/1993</b>	<b>Weingard</b>	<b>382</b>	<b>15</b>		
	<b>5,263,122</b>	<b>11/16/1993</b>	<b>Nunally</b>	<b>395</b>	<b>27</b>		
	<b>5,664,065</b>	<b>09/02/1997</b>	<b>Johnson</b>	<b>395</b>	<b>21</b>		
	<b>5,704,016</b>	<b>12/30/1997</b>	<b>Shigematsu, et al.</b>	<b>395</b>	<b>27</b>		
	<b>6,088,490</b>	<b>07/11/2000</b>	<b>Iwata, et al.</b>	<b>382</b>	<b>312</b>		
FOREIGN PATENT DOCUMENTS							
	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT	
	<b>1 262 912 A2</b>	<b>12/04/2002</b>	<b>EP</b>				
	<b>55-124879</b>	<b>09/26/1980</b>	<b>JP</b>			<b>Abstract</b>	
	<b>2679730</b>	<b>08/01/1997</b>	<b>JP</b>			<b>Abstract</b>	
	<b>6-83944</b>	<b>03/25/1994</b>	<b>JP</b>			<b>Abstract</b>	
	<b>2624143</b>	<b>04/11/1997</b>	<b>JP</b>			<b>Abstract</b>	
	<b>07-262157</b>	<b>10/13/1995</b>	<b>JP</b>			<b>Abstract</b>	
	<b>07-334478</b>	<b>12/22/1995</b>	<b>JP</b>			<b>Abstract</b>	
	<b>08-153148</b>	<b>06/11/1996</b>	<b>JP</b>			<b>Abstract</b>	
	<b>2879670</b>	<b>01/29/1999</b>	<b>JP</b>			<b>Abstract</b>	
	<b>2-64788</b>	<b>03/05/1990</b>	<b>JP</b>			<b>Abstract</b>	
	<b>WO 00/29970</b>	<b>05/25/2000</b>	<b>PCT</b>				
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
	<b>Fukushima, et al., "Neocognitron: A New Algorithm for Pattern Recognition Tolerant of Deformation and Shifts in Position", Pattern Recognition, Vol. 15, 1982, pp. 455-469.</b>						
	<b>Murray, et al., "Pulse-Stream VLSI Neural Networks Mixing Analog and Digital Techniques", IEEE Trans. on Neural Networks, Vol. 2, 1991, pp. 193-204.</b>						
	<b>Eckhorn, et al., "Feature Linking via Synchronization among Distributed Assemblies: Simulation of Results from Cat Visual Cortex", Neural Computation, Vol. 2, 1990, pp. 293-307.</b>						
	<b>Broussard, et al., "Physiologically Motivated Image Fusion for Object Detection using a Pulse Coupled Neural Network", IEEE Trans. on Neural Networks, Vol. 10, 1999, pp. 554-563.</b>						
	<b>LeCun, et al., "Convolutional Networks for Images, Speech, and Time Series", in Handbook of Brain Theory and Neural Networks (M. Arbib. Ed.), MIT press, 1995, pp. 255-258.</b>						
	<b>Daugman, "Complete Discrete 2-D Gabor Transforms by Neural Networks for Image Analysis and Compression", IEEE Trans. on Acoustics, Speech, and Signal Processing, Vol. 36, 1988, pp. 1169-1179.</b>						
	<b>Indiveri, "A Neuromorphic VLSI Device for Implementing 2-D Selective Attention Systems", IEEE Trans. on Neural Networks, Vol. 12, 2001, pp. 1455-1463.</b>						
EXAMINER <b>/Nathan Brown Jr/</b>				DATE CONSIDERED <b>03/17/2009</b>			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Sheet 1 of 1

Form #62

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /NHB/